WASHINGTON STATE DEPARTMENT OF ECOLOGY

Focus

Recycling Benefits the Environment

Based on Washington's 2000 Recycling Efforts*

Recycling conserves natural resources.

Each ton of solid waste that is diverted from disposal, whether reused, recycled or composted, is one less ton of solid waste that requires disposal. When the tonnage of reused, recycled and composted solid waste is considered in light of the disposal capacity required to accept that material, the value of these actions becomes very clear. By implementing these other waste management strategies (actually resource management strategies), we have reduced our dependence upon incinerators and landfills. And when using recycled materials in place of trees, metal ores and minerals, pressure is reduced on expanding forestry and mining production. **By recycling over 390,000 tons of scrap steel in 2000, Washington recycling efforts reduced the need for virgin materials by twice that amount, including 491,000 tons of iron ore, 275,000 tons of coal and 24,000 tons of limestone.**

Recycling provides environmentally preferable sources of raw materials.

Recycling is more than a waste management strategy; it is also an important strategy for reducing the environmental impacts of industrial production. Supplying industry with recycled materials, instead of "virgin" resources extracted from forests and mines, is preferable because it saves energy, reduces emissions of greenhouse gases and other dangerous air and water pollutants, and because it conserves scarce natural resources. **In 2000, Washington recycling programs supplied industry with over 3,900,000 tons of recycled commodities such as metals, plastics, paper, glass, wood and construction and demolition scrap.**

Recycling saves energy.

Energy savings is an important environmental benefit of recycling, because using energy requires the consumption of fossil fuels and involves emissions of air and water pollutants. The energy required to manufacture paper, plastics, glass and metal from recycled materials is generally less than the energy required to produce them from virgin materials. Additionally, the steps in providing recycled materials to industry (including collection, processing and transportation) typically use less energy than the steps in supplying virgin materials to industry (including extraction, refinement, transportation and processing). **The 1,522,506 tons of metals, paper, glass and plastic recycled in Washington in 2000 saved a total of about 23 trillion BTUs of energy, equal to nearly 3% of all energy used by industry in the state. This is enough to power over 23,000 homes or an entire city for one year that is between the size of Lakewood and Bellingham.**

Recycling reduces greenhouse gas emissions.

Recycling helps stem the dangers of global climate change by reducing the amount of energy used by industry, thus reducing greenhouse gas emissions. This is because a great amount of energy used in industrial processes and in transportation involves burning fossil fuels. **Washington's measured recycling efforts for the year 2000 reduced greenhouse gas emissions by about 1,280,000 tons carbon equivalent.**

Recycling reduces emissions of air and water pollutants.

Recycling can significantly reduce the quantity of pollutants from entering the air and water. This benefit is added to because of the reduced fossil fuel use and because recycling keeps materials out of landfills, where they can introduce leachate into groundwater systems, and out of incinerators, which can put pollutants into the air and into ash residue. Recycling has been shown to produce less of 27 different types of air and water pollutants, as opposed to using virgin resources in manufacturing and disposing of the waste products. **In 2000, Washington's measured recycling efforts reduced over 8,000 tons of water pollutants and 132,000 tons of air pollutants (not including the greenhouse gas reductions mentioned above).**

Energy Savings and Greenhouse Gas Impacts from Recycling In Washington State – 2000

(Relative to energy required for virgin production)

Material/Grade	Tons Recovered	BTUs Saved (in millions)	Barrels of Oil Saved	Tons Greenhouse Gases Reduced (MTCE)
Aluminum	17,945	2,719,852	499,317	70,131
Newsprint	219,716	2,110,834	387,512	138,680
Mixed Waste Paper	333,470	4,638,047	851,463	437,833
Cardboard	495,470	3,571,694	655,700	359,667
Glass	84,062	302,488	55,531	8,962
Steel Cans	22,632	506,636	93,009	12,953
Ferrous Metals	392,647	8,789,719	1,613,636	224,716
PET	5,100	145,718	26,751	3,383
HDPE	5,491	94,563	17,360	2,216
LDPE	4,032	98,639	18,108	2,150
Other Plastics	6,512	112,146	20,588	2,628
Food Scraps	73,895	N/A	N/A	1,705
Yard Waste	450,761	N/A	N/A	10,082
Other Organics	304,889	N/A	N/A	6,819
Total		**23,090,336**	**4,238,975**	**1,281,925**

*Based on the following sources: Department of Ecology 2000 Recycling Survey; the Environmental Benefits of Recycling model, a Northeast Recycling Council project funded by the U.S. E.P.A., Region II; Energy Information Administration, Washington State Energy Data Report for 1999.